From: Jennifer Hains -MDE- [jennifer.hains@maryland.gov]
Sent: 1/26/2017 7:02:37 PM
To: Hence, Kia [hence.kia@epa.gov]; Michael Woodman -MDE- [michael.woodman@maryland.gov]
Subject: Re: FW: 2016 PADEP Exceptional Event Analysis Plan
Attachments: MD_sites_for_EE_package.xlsx

Hi Kia,
Thanks for sharing. Yes we are interested in collaborating with PA and the regions on this package.
Right now we are planning to include Fairhill (DV went from 76 -74 with the exclusion).

We are also planning to include Aldino, Essex and Edgewood. The DVs for these sites is between 70-75, but future years might be affected
so we will add them to the mix.

We are also planning to include S. Carrol and Furley with DVs less than 70, again because future years could be affected.

I've attached a spreadheet like PA's.

Let me know if you have any questions.

Thanks for your help with this,
Jen

On Thu, Jan 26, 2017 at 11:36 AM, Hence, Kia <hence.kia@epa.gov> wrote:

Hi Jen,

Here's an example of what PADEP sent me. See the attachment. Their chart summarized well what monitors are affected by the fire event. If you are interested in collaborating with PADEP and/or R1 and R2 we should have a discussion. Sean, I hope you don't mind me sharing...

From: Nolan, Sean [mailto:senolan@pa.gov]
Sent: Thursday, January 19, 2017 3:57 PM
To: Hence, Kia <hence.kia@epa.gov>
Cc: Ramamurthy, Krishnan <kramamurth@pa.gov>; kdalal@pa.gov; Lazor, Nicholas <nlazor@pa.gov>; Chow, Alice <chow.alice@epa.gov>; Hyden, Loretta <Hyden.Loretta@epa.gov>; Rehn, Brian <rehn.brian@epa.gov>; Pino, Maria <Pino.Maria@epa.gov>; powers, marilyn <powers.marilyn@epa.gov>
Subject: 2016 PADEP Exceptional Event Analysis Plan

Kia,

As I discussed by phone a few weeks ago, I am providing you with a description of what we are proposing with respect to flagging data for exceptional events in 2016.

Overall, there are two time frames of interest. Those two time periods are as follows:

1.) May 25-26, 2016

2.) July 21-22, 2016

Preliminary analysis of both events indicate that ozone exceedances across the Commonwealth were influenced by wildfire smoke originating from western / central Canada. After doing a cursory review of historical ozone concentrations during these two periods, analyzing meteorological conditions during the two periods and determining what impact these events have had on attaining the 2008 and 2015 ozone standard in the Commonwealth, I believe the results of this analysis would be a worthwhile endeavor.
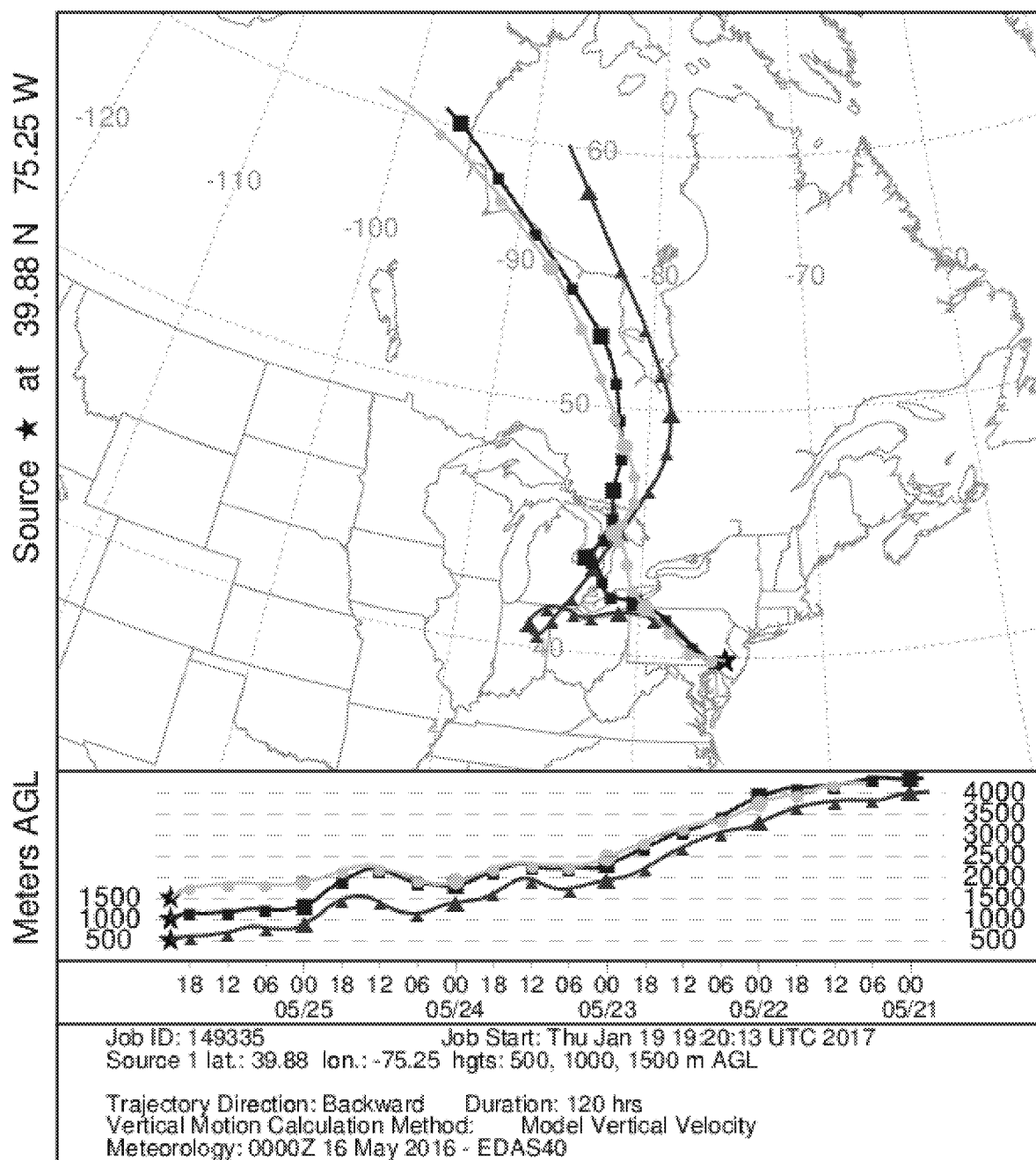
I wanted to touch briefly on why we think wildfire smoke is a contributor to the ozone exceedances we saw during two periods we have above. Each brief write-up will show that fires were persistent across Canada days before the event impacted the Commonwealth and that the meteorological conditions were conducive to transport of ozone precursors from the wildfires.

May 25, 2016 – The NOAA fire and smoke detection map below (overlaid into Google Earth) from May 20, 2016 shows the location of the hot spots and relative smoke regions across Canada and northern US.
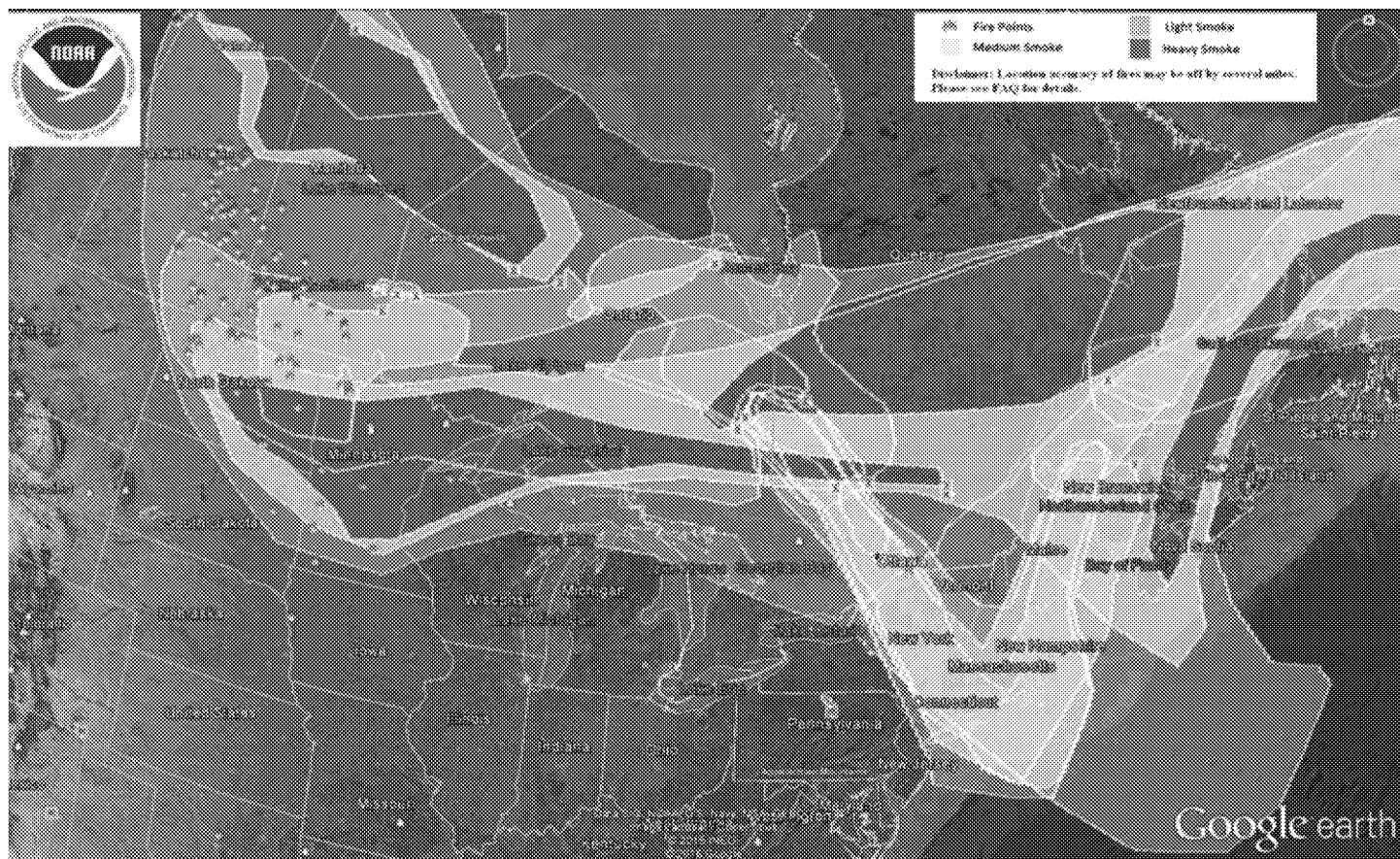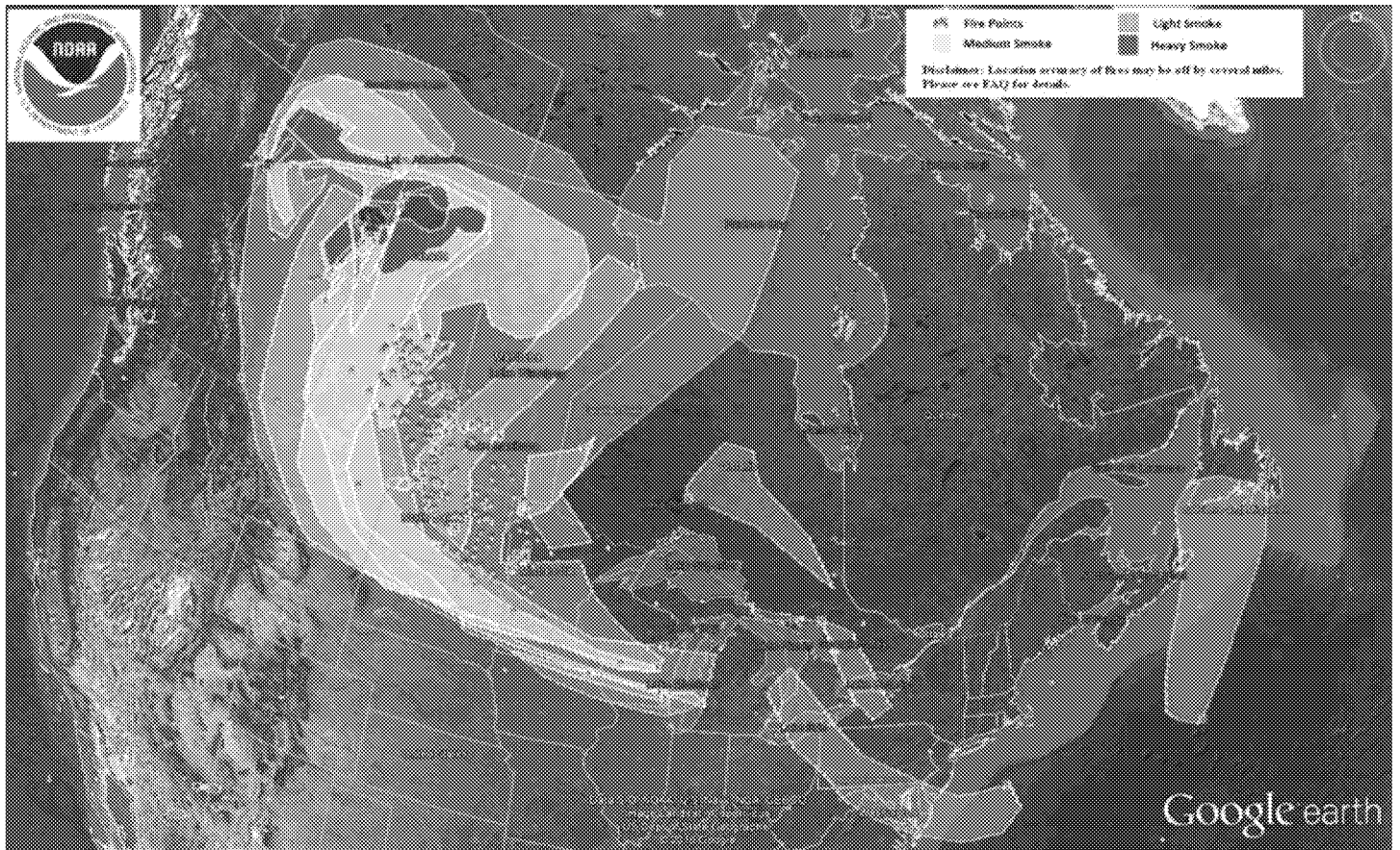
The 120-hour (5-day) back trajectory from May 25, 2016 (below) shows an air mass originating across central Canada, the source region of the fires.

NOAA HYSPLIT MODEL
Backward trajectories ending at 2100 UTC 25 May 16
EDAS Meteorological Data

Source ★ at 39.88 N 75.25 W

Meters AGL

18 12 06 00 18 12 06 00 18 12 06 00 18 12 06 00 18 12 06 00
05/25   05/24   05/23   05/22   05/21

Job ID: 149335   Job Start: Thu Jan 19 19:20:13 UTC 2017
Source 1 lat.: 39.88 lon.: -75.25 hgts: 500, 1000, 1500 m AGL

Trajectory Direction: Backward   Duration: 120 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 May 2016 - EDAS40

July 21, 2016 - The NOAA fire and smoke detection map below (overlaid into Google Earth) from July 16, 2016 shows the location of the hot spots and relative smoke regions across Canada and northern US.
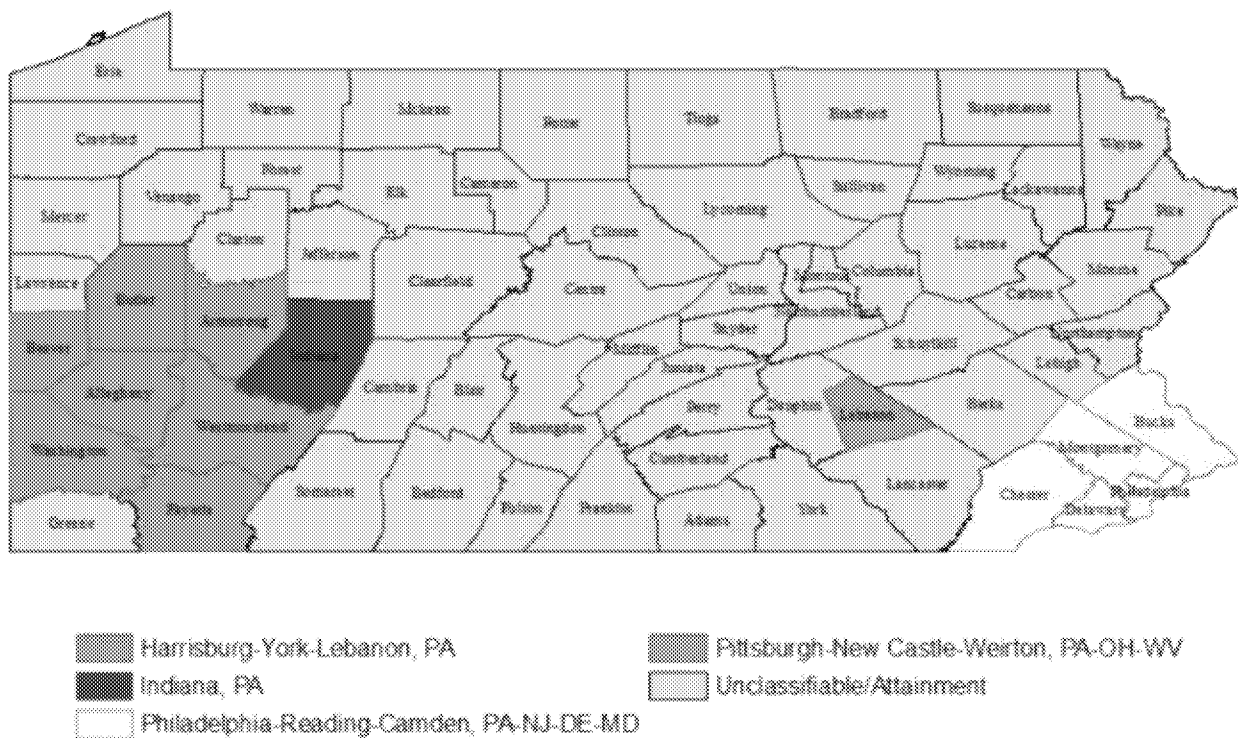
The 120-hour (5-day) back trajectory from July 21, 2016 (below) shows an air mass originating across central Canada, the source region of the fires.

NOAA HYSPLIT MODEL
Backward trajectories ending at 2100 UTC 21 Jul 16
EDAS Meteorological Data
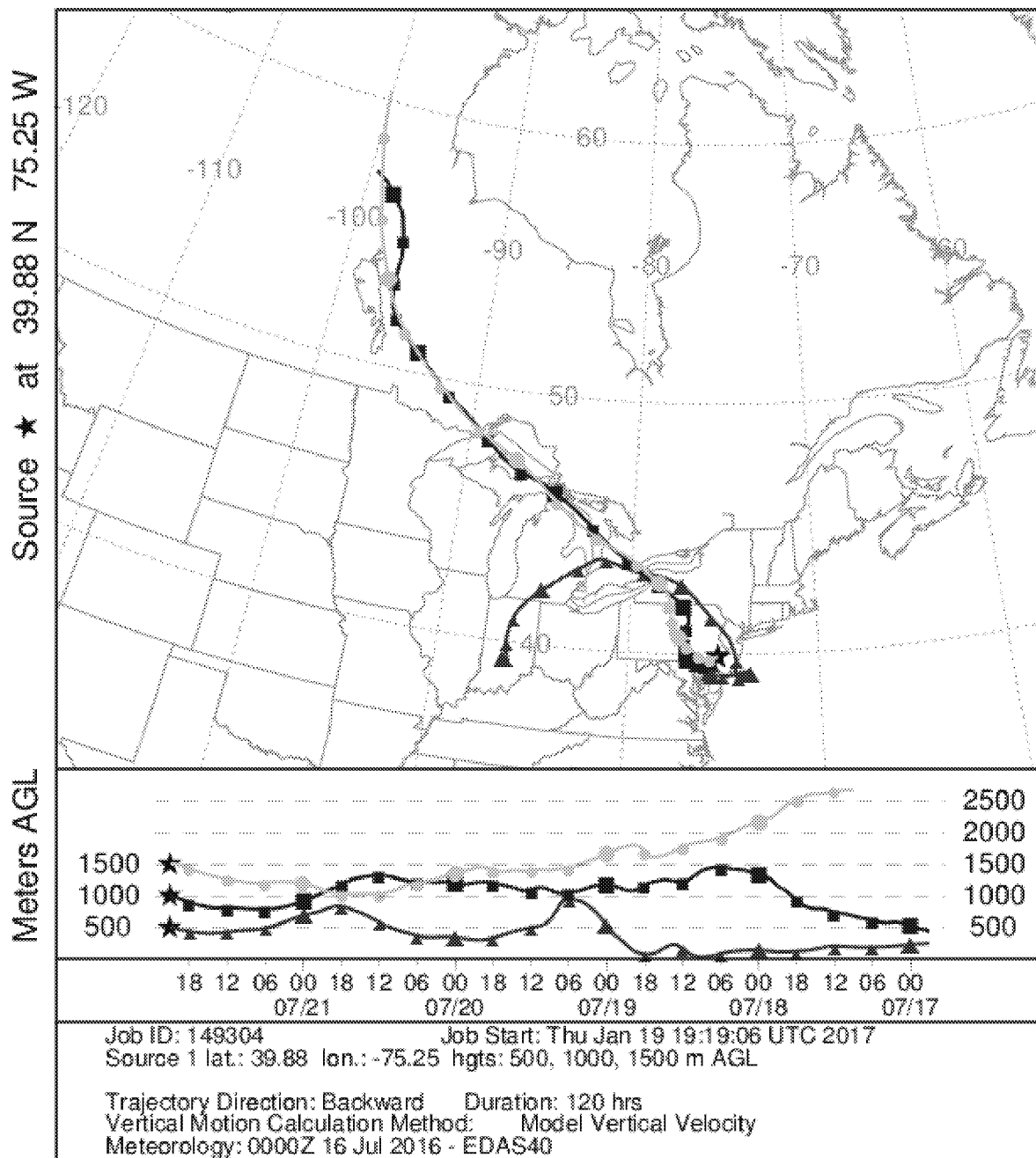
The best way to illustrate the impact of maximum daily 8-hour ozone average concentrations during the four days above had on our ozone monitors' ability to show attainment across the Commonwealth is by providing a table (see attached PDF for details). You will note after reviewing the attached table that flagging this data for exceptional event status will not only impact PADEP's ozone designation recommendations with respect to the 2015 ozone NAAQS but also the current status of attainment (specifically in the Philadelphia nonattainment area) with respect to the 2008 ozone NAAQS.

For quick reference, I have provided the map of our proposed designations below:

Harrisburg-York-Lebanon, PA

Indiana, PA

Philadelphia-Reading-Camden, PA-NJ-DE-MD

Pittsburgh-New Castle-Weirton, PA-OH-WV

Unclassifiable/Attainment

As it shows in the attached PDF, approval of the May 25-26, 2016 exceptional event analysis would impact the recommended nonattainment designation for Lebanon County (the Lebanon monitor's 2016 ozone design value would drop from 71 ppb to 70 ppb, therefore being in attainment of the 2015 ozone NAAQS). It would also have an impact on the attainment status for Berks County (the Reading monitor's 2016 ozone design value would drop from 71 ppb to 70 ppb, therefore being in attainment of the 2015 ozone NAAQS).

Approval of the May 25-26, 2016 and July 21-22, 2016 exceptional event analysis would impact the attainment status of the Philadelphia nonattainment area with respect to the 2008 ozone NAAQS. The controlling design values for the Philadelphia nonattainment area are the Bristol monitor (in Bucks County) and the Northeast Airport monitor (in Philadelphia County). Both the Bristol and Northeast Airport 2016 ozone design values would go from 77 ppb to 75 ppb, therefore being in attainment of the 2008 ozone NAAQS.

Keep in mind that the data from these four days are not only likely to impact the 2016 design value period but also the 2017 and 2018 design value period (since the year 2016 is being used in the design value calculation of all three periods).

Finally, I would like to add that we are very concerned with the pace at which the 2016 PM 2.5 speciation data is being added to the AirnowTech (for initial review by the state/local agencies before the data is being sent to EPA's AQS database). As of today, we have the April 2016 data available for our review. At the current pace, the data for both May and July 2016 will come available near the May 31, 2016 submission deadline for these exceptional event analyses. However, that is not enough time to complete an adequate analysis of the data for inclusion in our exceptional event analysis, which is also required to go out for a 30-day public comment period. Having the PM 2.5 speciation data would be very beneficial in our exceptional event demonstrations, since precursors of forest fires show up on the filters.

Thank you for the opportunity to express our viewpoint on both of these periods and why we are planning on pursuing flagging our hourly ozone monitoring data during these two periods in 2016. I will be the point person for this analysis so if you have any preliminary questions, please do not hesitate to ask. My official contact information appears below.

Best regards,

Sean

Sean P. Nolan | Chief, Quality Assurance and Data Assessment Section

Department of Environmental Protection | Bureau of Air Quality

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